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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,005	06/09/2006	Pierre Jean Messier	TRI-018-NP	9022
24964 7590 09/02/2010 GOODWIN PROCTER LLP ATTN: PATENT ADMINISTRATOR 620 Eighth Avenue NEW YORK, NY 10018				
EXAMINER				
STEELE, JENNIFER A				
ART UNIT		PAPER NUMBER		
1782				
NOTIFICATION DATE		DELIVERY MODE		
09/02/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary**Application No.**

10/528,005

Applicant(s)

MESSIER, PIERRE JEAN

Examiner

JENNIFER STEELE

Art Unit

1782

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,25-27,29-31 and 41-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,25-27,29-31 and 41-45 is/are rejected.
- 7) ☐ Claim(s) 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date 4/12/2010
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claim 1, 3, 5, 6, 25-27, 29, 31 and 41-45 rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al (US 5,556,618) in view of Messier (US 6,224,655).

Claim 1 describes a protective media for filtering and killing microorganisms in air, said protective media comprising,

- A porous dielectric carrier;
- A biocidal active agent incorporated in or on said porous dielectric carrier, said active agent being an iodinated resin; and
- An electrostatic charge across at least a portion of said porous dielectric carrier,

- Wherein said porous dielectric carrier is a non-woven material,
- And wherein said porous dielectric carrier is capable of holding an electrostatic charge in the presence of said biocidal active agent.

Ando teaches an antibacterial electret material (Title). Ando teaches an antibacterial material which consists of a synthesized organic polymer having a volume resistivity of not less than 10^{13} ohm-cm and containing an electret stabilizer selected from the group composed of hindered amine compound, nitrogen containing hindered phenol compound, a metallic salt hindered phenol compound, a metallic salt hindered phenol compound, a phenol compound, a sulfur compound and a phosphorus compound and 0.1 to 4% by weight of metal ion-containing inorganic compound which serves as an antibacterial agent. The electret material has a surface charge of 1×10^{-10} coulomb/cm² (ABST).

Ando teaches the object of the invention is to provide an antibacterial electret material having good charge stability and an electret property while maintaining antibacterial activity (col. 1, lines 60-63). Ando teaches the material is useful for filters, food packaging, medical materials and working clothes (col. 1, lines 5-8).

Ando teaches the electret stabilizer is added to polymer resin and formed into fiber, woven fabric, knit, nonwoven fabric, paper film or other material and is then subjected to the conventional treatment for imparting an electret property under high DC voltage (col. 3, lines 35-41) and (col. 4, lines 30-42). Ando teaches an electrostatically charged nonwoven material which is equated with the porous dielectric carrier as claimed.

Ando teaches an antibacterial agent is a metal-ion containing inorganic compound include metal-ion-containing zeolite, soluble glass, zirconium phosphate, titanium phosphate and tin phosphate. Examples of metal ion containing inorganic compounds include silver, copper, zinc, mercury, tin, lead, bismuth, chromium and thallium ions (col. 3, lines 5-17). Ando teaches the antibacterial agent is incorporated into the polymer which is formed into a nonwoven (col. 4, lines 38-40). An antibacterial agent kills bacteria and would be a biocidal agent.

Ando teaches the filter material has an efficiency of trapping bacteria of 95% even after use of the filter within a building for half a year (col. 4, lines 53-57). Ando teaches the antibacterial agent should be 0.1% by weight or more but limited to 4% because if the amount is excessively high, the electret property is deteriorated (col. 3, lines 57-62). Ando teaches the nonwoven web is capable of holding an electrostatic charge in the presence of a biocidal active agent.

Ando differs from the current application and does not teach the active agent is iodinated resin.

Messier teaches a biostatic air filter that is a microbiocidal air filter element comprised of an air permeable nonwoven fibrous carrier to which the iodinated strong base anion exchange resin is held within. Messier teaches the anion exchange resin can be in the form of particles dispersed in the fibrous matrix of the filter element.

Messier presents a finding of a biocidal agent that can be incorporated into a filter medium which kills microorganisms. Ando presents a finding of a nonwoven filter material that incorporates an antibacterial agent as well as an electret charged

nonwoven. It would have been obvious to one of ordinary skill in the art to substitute the antibacterial agent of Ando with an iodinated resin motivated to produce a filter that attracts bacteria and microorganisms and then kills the bacteria.

As to claim 3 and 29, Ando teaches a nonwoven fabric and therefore is fiber based.

Regarding claim 5 and 31, Ando differs and does not teach a three dimensional structure. Ando teaches the antibacterial metal ion is incorporated into the polymer which produces a nonwoven filter and as such it is entrapped within the fibrous matrix.. Messier teaches a zig-zag structure which would be three-dimensional. Messier teaches the iodinated resin can be in particulate form and can be between layers or coated particulates on membranes. It would have been obvious to incorporate the antibacterial within the nonwoven material motivated to incorporate the antibacterial agent where the bacteria and microorganisms will be trapped within the filter material.

As to claim 6, Ando differs and teaches the antibacterial metal ion is incorporated into the polymer which produces a nonwoven filter and as such it is entrapped within the fibrous matrix. Messier teaches the iodinated resin particles are dispersed in the carrier matrix of the air filter element and the particles are entrapped within the matrix (col. 2, lines 20-21). It would have been obvious to incorporate the antibacterial within the nonwoven material motivated to incorporate the antibacterial agent where the bacteria and microorganisms will be trapped within the filter material.

As to claim 25-27, Ando differs and does not teach layers of nonwoven dielectric carriers. Messier teaches layers of air filter materials as shown in Fig. 1 (col. 5, lines 9-40).

Regarding claim 26, Ando does not teach layers and Messier is relied upon for teaching layer. Messier teaches an iodinated exchange resin can be present on a first and second membrane (col. 5, lines 9-40).

As to claim 27, Messier teaches an air gap separates the filter elements of the intermediate filter and the iodinated resin membranes.

As to claims 25-27, it would have been obvious to one of ordinary skill in the art to employ a multilayered filter structure motivated to produce a filter that has the air permeability and efficiency that additional layers provide to trap and kill microorganisms.

As to claim 41-43, Ando teaches the polymer fiber can be polyesters, polyolefins, polypropylene, polyethylene or polyamide resins (col. 2, lines 17-21).

As to claim 44 and 45, Ando teaches the filter remains efficient after a half year when used as a building filter. Ando is silent as to whether the charge remains. Ando teaches the level of antibacterial agent is kept below 4% in order to maintain the charge and the filter remains efficient, it is presumed that the claimed property is inherent to the structure of Ando or would have been obvious over Ando. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting

the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112- 2112.02

2. Claim 4 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al (US 5,556,618) in view of Messier (US 6,224,655) and in further view of Messier (US 5,639,452). Ando in view of Messier '655 does not teach a sponge like structure that is a foam. Messier '452 teaches a iodine resin disinfectant wherein the iodine is impregnated into a resin (ABST). Messier '452 teaches the invention is useful for protective clothing and disinfectant dressings and cartridge filters (col. 35, lines 20-35). Messier '452 teaches a disinfectant component comprising particles of an iodinated anion exchange resin and a carrier component being configured to hold onto the iodine particles (col. 6, lines 45-54). Messier '452 teaches the carrier is a foam having a spongy aspect and having dispersed within the polymeric matrix particles of the iodinated resin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the iodinated resin particles into a foam structure motivated by Messier '452 foam structure used for protective clothing or media.

Allowable Subject Matter

3. Claim 32 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Ando teaches the antibacterial agent is incorporated

into the polymer which is formed into a fiber and a nonwoven fabric. Ando does not teach antibacterial agents that are particles entrapped in the fibrous matrix. While Messier teaches the iodinated resin is in particle form, the structure of a particle entrapped in the fibrous matrix would not be obvious to combine or substitute with an antibacterial agent extruded in a polymer fiber.

Response to Arguments

4. Applicant's amendments and arguments with respect to claim 1, 3-6, 25-27, 29-32 and 41-45 have been considered but are moot in view of the new ground(s) of rejection. The previous 103 rejections over Messier in view of Pike are withdrawn and new grounds of rejection over Ando in view of Messier presented in this Office Action. As a result, this Office Action is Non-Final.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER STEELE whose telephone number is (571)272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./
Examiner, Art Unit 1782

8/28/2010

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1782